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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/826,224	04/04/2001	Dexter Chun	4740-002	2474
24112	7590	12/02/2004	EXAMINER	
COATS & BENNETT, PLLC P O BOX 5 RALEIGH, NC 27602			DAVIS, CYNTHIA L	
			ART UNIT	PAPER NUMBER
			2665	

DATE MAILED: 12/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/826,224

Applicant(s)

CHUN ET AL.

Examiner

Cynthia L Davis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>11/29/2002</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

1. Claims 1-8 and 21 are rejected under 35 U.S.C. 102(a) as being anticipated by Sauer.

Regarding claim 1, a base station controller system communicatively coupled to a core network is disclosed in Sauer, figure 1a, element 220, and figure 1b. A plurality of resource pools to support wireless communication with a plurality of wireless access terminals, each said resource pool performing a defined call processing function is disclosed in column 8, lines 4-8. A switching fabric to provide redundant and independent access to each of said resource pools such that resources from each said resource pool are independently selectable from resources in other said resource pools by configuring said switching fabric is disclosed in column 7, lines 32-36 (by managing the ATM connections between the various resources, the BSC may select which resource is needed at a given moment). A system controller to configure said switching fabric to selectively allocate resources from said resource pools to communicatively connect said wireless access terminals with the core network is disclosed in figure 1b, element 105, and column 8, lines 45-49.

Regarding claim 2, the switching fabric comprising a distributed ATM switching fabric is disclosed in column 7, line 32.

Regarding claim 3, a centralized ATM switching resource communicatively coupled to said system controller is disclosed in figure 1a, element 251, and figure 1b, element 251. At least one distributed ATM switching resource; said at least one distributed ATM switching resource providing redundant communication links between said resource pools and said centralized ATM switching resource is missing from Sauer. Hoffpauir discloses redundant switching modules in figure 1, element 16, and column 3, line 22. It would have been obvious to one skilled in the art at the time of the invention to have redundant switching modules. The motivation would be to have additional switching resources available should the primary ones fail.

Regarding claim 4, the resource pools comprising front haul exchange termination resources to communicatively couple with a mobile switching center in the core network is disclosed in Sauer, column 7, lines 3-4.

Regarding claim 5, the base station controller system of claim 1 wherein said resource pools comprise service option element resources to provide vocoding and echo cancellation functions for voice calls is disclosed in figure 1b, element 252, and column 7, lines 21-23.

Regarding claim 6, the resource pools comprising selector element resources to provide radio link management and protocol support for voice, data, and packet data calls is disclosed in column 4, lines 52-54.

Regarding claim 7, the resource pools comprising packet network exchange termination resources to communicatively couple with a packet data serving node in the core network is disclosed in column 4, lines 52-54 (the system can process packet traffic from voice, data, image, and video sources in the core network).

Regarding claim 8, the resource pools comprising back haul exchange termination resources to communicatively couple with at least one radio base station providing RF communication to support calls to and from said plurality of said wireless access terminals is disclosed in figure 1a, element 220 (the BSC) and elements 260-263 (various BTS units connected to the BSC).

Regarding claim 21, a method of structuring a base station controller system wherein call processing for each call being routed through the base station controller comprises performing a plurality of call processing functions is disclosed in Sauer. Providing a plurality of resource pools, each one of said resource pools providing one of the plurality of call processing functions is disclosed in column 8, lines 4-8. Interconnecting said plurality of resource pools through a configurable switching fabric such that each said resource pool is independently accessible is disclosed in column 7, lines 32-36 (the resources are connected by an ATM switching fabric). Allocating a specific combination of resources selected from one or more resource pools in said plurality of resource pools to each call being routed through said base station controller by configuring said switching fabric is disclosed in column 7, lines 32-36 (by managing the ATM connections between the various resources, the BSC may select which resource is needed at a given moment).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 9, 10, 16, 17-19, 20, and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sauer.

Regarding claim 9, a plurality of resource pools, each said resource pool comprising resources supporting at least one call processing function is disclosed in Sauer, figure 1a, elements 252, 253, and 254, and column 6, lines 61-65. A system controller to allocate selected combinations of specific resources from one or more of said plurality of resource pools to provide desired call processing for respective ones of calls to and from a plurality of wireless access terminals is disclosed in figure 1a, element 220. A hub subrack comprising a central switching resource and said system controller; and at least one processing subrack to carry said plurality of resource pools, each said processing subrack comprising resources from each of said plurality of resource pools, and further comprising switching resources to communicatively couple said processing subrack to said hub subrack is not specifically disclosed in Sauer. However, Sauer states in column 5, lines 28-33, that the exact structure of the system is not illustrated, so as to allow for addition or removal of resources as needed. This implies that the BSC and switch could be on a hub subrack, and that resources could be added on different racks/subracks. There also must be switching resources to couple

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the resources and BSCs together on the various racks/subracks. It would have been obvious to one skilled in the art at the time of the invention to structure the system as a hub subrack with resources on the various other subracks. The motivation would be to make the system scalable (Sauer, column 8, lines 13-14).

Regarding claim 10, the switching resources on each said processing subrack and said central switching resource on said hub subrack together comprising a switching fabric to communicatively couple said hub subrack with each of said processing subracks is disclosed in Sauer, figure 1a (the resources are coupled to the BSC and switch via a switching fabric).

Regarding claim 16, each said mixed-architecture processing subrack comprising a percentage of an overall call processing capacity of said base station controller system, and further wherein the overall call processing capacity of said base station controller system may be scaled based on adding additional ones of said processing subracks is disclosed in Sauer, column 5, lines 28-33, and column 8, lines 13-14 (as many resources may be added as are needed for a particular application).

Regarding claim 17, the system controller comprising at least one general processing board operative to configure said central switching resource on said hub subrack and said switching resources on at least one of said processing subracks to select combinations of specific resources from one or more of said plurality of resource pools for each call routed through said base station controller is disclosed in Sauer, figure 1a, element 220, and column 7, lines 13-31 (the BSC module allocates resources to construct calls).

Regarding claim 18, the system controller comprising a processing subsystem configured to optimize resource selections such that resource assignments comprising said selected combinations of resources from said one or more of said plurality of resource pools are selected from a minimum number of said processing sub racks is not specifically disclosed in Sauer. However, Sauer does disclose in column 7, lines 13-31 that the BSC manage resources to construct calls. It would have been obvious to one skilled in the art at the time of the invention to minimize the number of subracks involved in a given call. The motivation would be to efficiently allocate resources to process the call, so as to avoid unnecessary inter-subrack communication.

Regarding claim 19, the plurality of resource pools comprising front haul exchange termination resources to provide a plurality of front haul communication links with an associated mobile switching center, each said front haul communication link carrying call traffic for at least one call between said base station controller system and the associated mobile switching center are disclosed in Sauer, column 7, lines 3-4. Back haul exchange termination resources to provide a plurality of back haul communication links with at least one radio base station, each said back haul communication link carrying call traffic for at least one call between said base station controller system and at least one radio base station in wireless communication with at least one wireless access terminal involved in said at least one call are disclosed in figure 1a, element 220 (the BSC) and elements 260-263 (various BTS units connected to the BSC). Selector element resources to provide radio link management for calls being routed through said base station controller are disclosed in column 4, lines 52-54

(the system manages routing of various types of traffic; see rejection of claim 6, above).

Service option element resources to provide selected signal processing functions, including voice coding and decoding and echo cancellation functions for calls being routed through said base station controller are disclosed in figure 1b, element 252, and column 7, lines 21-23.

Regarding claim 20, the resource pools further comprising packet core network exchange termination resources to route packet data calls to and from one or more of the plurality of wireless access terminals to an external packet data network is disclosed in Sauer, column 4, lines 52-54 (the system can process packet traffic from voice, data, image, and video sources in the core network).

Regarding claim 22, organizing the base station controller system as a rack system comprising a hub subrack providing centralized switching resources, and one or more processing subracks, each said processing subrack carrying at least a portion of each said resource pool and rack switching resources to interface with said hub subrack is not specifically disclosed in Sauer. However, Sauer states in column 5, lines 28-33, that the exact structure of the system is not illustrated, so as to allow for addition or removal of resources as needed. This implies that the BSC and switch could be on a hub subrack, and that resources could be added on different racks/subracks. There also must be switching resources to couple the resources and BSCs together on the various racks/subracks. It would have been obvious to one skilled in the art at the time of the invention to structure the system as a hub subrack with resources on the various

other subracks. The motivation would be to make the system scalable (Sauer, column 8, lines 13-14).

Regarding claim 23, increasing a call processing capacity of the base station controller system based on adding additional ones of said processing subracks as needed is disclosed in Sauer, column 5, lines 28-33, and column 8, lines 13-14 (as many resources may be added as are needed for a particular application).

Regarding claim 24, optimizing resource assignments for a given call being routed through the base station controller system by assigning specific resources from one or more said resource pools to minimize the number of said processing subracks used to support the given call is not specifically disclosed in Sauer. However, Sauer does disclose in column 7, lines 13-31 that the BSC manage resources to construct calls. It would have been obvious to one skilled in the art at the time of the invention to minimize the number of subracks involved in a given call. The motivation would be to efficiently allocate resources to process the call, so as to avoid unnecessary inter-subrack communication.

3. Claims 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sauer in view of Hoffpauir.

Regarding claim 11, the switching fabric comprising a communication switch on said hub subrack; a communication switch on each said processing subrack; and a plurality of communication links between said communication switches on said processing subracks and said communication switch on said hub subrack is missing from Sauer. However, Hoffpauir discloses in column 3, line 23, and column 4, lines 26-

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29, redundant switching modules and redundant buses linking various resources. It would have been obvious to one skilled in the art at the time of the invention to have various switches and links linking the components on the various subracks. The motivation would be to connect the subracks.

Regarding claim 12, the communication links between each said processing subrack and said hub subrack comprising redundant first and second communication links is missing from Sauer. However, Hoffpauir discloses in column 4, lines 26-29, redundant control buses linking various resource processors. It would have been obvious to one skilled in the art at the time of the invention to have redundant communication links between the components on the various subracks. The motivation would be to have a fallback link should one of the links fail.

Regarding claim 13, each said communication switch on said hub subrack and each said processing subrack comprising redundant primary and secondary communication switches for switching said first and second communication links, respectively is missing from Sauer. However, Hoffpauir discloses in column 3, line 23, and column 4, lines 26-29, redundant switching modules and redundant buses linking various resources. It would have been obvious to one skilled in the art at the time of the invention to have a switch for each of the redundant links. The motivation would be to have the buses able to operate independently.

Regarding claim 14, the switching fabric comprising a primary switching fabric and a redundant secondary switching fabric, said primary switching fabric comprising said first communication links and said first communication switches, and said

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secondary switching fabric comprising said second communication links and said second communication switches is missing from Sauer. However, Hoffpauir discloses in column 3, line 23, and column 4, lines 26-29, redundant switching modules and redundant buses linking various resources. It would have been obvious to one skilled in the art at the time of the invention to have a switch for each of the redundant links, comprising two separate switching fabrics. The motivation would be to have the buses able to operate independently.

Regarding claim 15, the communication switches on said hub subrack and each said processing subrack comprising one of a set of ATM switches, Ethernet switches, or Internet Protocol (IP) switches is disclosed in Sauer, figure 1b, element 251 (ATM). Also, Hoffpauir discloses Ethernet hubs at column 4, lines 36-37. It would have been obvious to one skilled in the art at the time of the invention to use Ethernet hubs. The motivation would be to use a standard type of hub.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia L Davis whose telephone number is (571) 272-3117. The examiner can normally be reached on 8:30 to 6, Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (703) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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HUY D. VU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600